THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	:	Kurt Bollacker, et al.
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For	:	**Visual Representation Tool for Structured Arguments**
Group Art Unit	:	2129
Examiner	:	Michael B. Holmes
Attorney Docket No.	:	NG(MS)6692

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APPEAL BRIEF

Sir:

Pursuant to the Notice of Appeal filed for this case on July 8, 2008,

Appellant presents this Appeal Brief.

I. **TABLE OF CONTENTS**

II.   **REAL PARTY IN INTEREST**

The real party in interest is Northrop Grumman Corporation.

III.   **RELATED APPEALS AND INTERFERENCES**

There are no related appeals or interferences.

IV.   **STATUS OF CLAIMS**

Claims 1, 3-9, 12-16, 18-23, 25-27, 30, 31, 33 and 34, which are attached in the first Appendix, are currently pending in this application. Claims 2, 10-11, 17, 24, 28-29 and 32 have been canceled. Claims 1-9, 12-15, 26-27 and 31-34 stand rejected under 35 U.S.C. §101 for being preemptive. Claim 30 stands rejected under 35 U.S.C. §101 for being preemptive. Claims 1-9, 12-15, 26-27 and 31-34 stand rejected under 35 U.S.C. §101 for lacking utility. Claim 30 stands rejected under 35 U.S.C. §101 for lacking utility. Claims 16, 18-23 and 25 stand rejected under 35 U.S.C. §101 for being directed to non-statutory subject matter. Claims 16, 18-23 and 25 stand rejected under 35 U.S.C. §101 for being preemptive. Claim 16, 18-23 and 25 stand rejected under 35 U.S.C. §101 for lacking utility due to being directed to a mathematical abstraction. Claims 1, 3-9, 12-16, 18-23, 25-27, 30, 31, 33 and 34 stand rejected under 35 U.S.C. §112, First Paragraph for lacking utility. The rejection of claims 1, 3-9, 12-16, 18-23, 25-27, 30, 31, 33 and 34 is appealed.

V.   **STATUS OF AMENDMENTS**

A response to a Final Office Action (hereinafter, "Final Rejection") issued on February 22, 2008 was filed on April 14, 2008. No amendments were made to the claims after the Final Rejection. An Advisory Action Before Filing an Appeal Brief (hereinafter, "Advisory Action") dated May 23, 2008 was issued. The Advisory Action indicated that the request for reconsideration set forth in the

response to the Final Rejection was considered, but did not place the application in condition for allowance because Appellant has not overcome 35 U.S.C. §101 rejections.

VI.   SUMMARY OF THE CLAIMED SUBJECT MATTER

A.   Claim 1

One aspect of the present invention, as recited in claim 1, is a system (10 of FIG. 1) for editing and displaying a structured argument (Par. [0027]), having a plurality of associated parameters (Par. [0029]). The system (10 of FIG. 1) comprises a processor (821 of FIG. 16) operative to execute computer executable instructions (Par. [0083]). The system (10 of FIG. 1) further comprises a computer readable medium (827 of FIG. 16) that stores the computer executable instructions (Par. [0084]). The computer executable instructions comprise a user interface (12 of FIG. 1) that graphically displays the plurality of parameters at a user accessible display (Par. [0031]) and receives input from a user defining the value of a selected parameter (Par. [0034]). The plurality of parameters comprise respective confidence values for a plurality of hypotheses (Par. [0029]). The computer executable instructions further comprises a computational engine (18 of FIG. 1) that alters the selected parameter to the defined value, updates the plurality of parameters according to the defined value of the selected parameter, and provides the altered parameters to the user interface, such that the display is updated in real time to reflect the user input (Par. [0037]). The computer executable instructions still further comprises a simulation function (602 of FIG. 12) that alters at least one parameter of the structured argument according to a predetermined series of values, representing changes in the at least one parameter over a period of time (Par. [0067]).

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B.   Claim 3

Claim 3 is directed to the system (10 of FIG. 1) of claim 1, wherein at least one confidence value being displayed to a user via a first, qualitative indicator and a second, quantitative indicator (Par. [0031]).

C.   Claim 4

Claim 4 is directed to the system (10 of FIG. 1) of claim 1, wherein the plurality of hypotheses are displayed as colored nodes within a belief network (Par. [0028] and Par. [0033]), and the respective confidence values being represented as at least one of the brightness, hue, and saturation of the color of the node (Par. [0031]).

D.   Claim 5

Claim 5 is directed to the system (10 of FIG. 1) of claim 4, wherein the plurality of hypotheses comprises supporting, detracting, and neutral hypotheses (Par. [0047] and Par. [0048]). The supporting hypotheses are associated with a first color (Par. [0048]). The detracting hypotheses are associated with a second color (Par. [0049]). The neutral hypotheses are associated with a third color (Par. [0049]).

E.   Claim 6

Claim 6 is directed to the system (10 of FIG. 1) of claim 1, wherein the plurality of parameters comprises a plurality of influence parameters (Par. [0032]). The influence parameters represent the degree of logical relatedness between respective associated first and second hypotheses (Par. [0032]).

F.   Claim 7

Claim 7 is directed to the system (10 of FIG. 1) of claim 6, wherein at least one influence parameter is displayed to a user via a first, qualitative indicator and a second, quantitative indicator (Par. [0032]).

G.   Claim 8

Claim 8 is directed to the system (10 of FIG. 1) of claim 6, wherein the influence parameters are displayed as connectors between respective first nodes, representing the associated first hypothesis, and respective second nodes, representing the associated second hypothesis (Par. [0032]). The magnitude of the influence parameter is represented by at least one spatial dimension of the connector (Par. [0032]).

H.   Claim 9

Claim 9 is directed to the system (10 of FIG. 1) of claim 1, wherein the computer executable instructions further comprise a collapse node function (134 of FIG. 3) that allows the structured argument to be scaled to a desired size (Par. [0044]).

I.   Claim 12

Claim 12 is directed to the system (10 of FIG. 1) of claim 1, wherein the plurality of parameters defines an argument model (Par. [0029]).

J.   Claim 13

Claim 13 is directed to the system (10 of FIG. 1) of claim 12, wherein the argument model is represented by a Bayesian belief network (Par. [0028]).

K.   Claim 14

Claim 14 is directed to the system (10 of FIG. 1) of claim 12, wherein the argument model is represented by a Dempster-Shafer belief network (Par. [0028]).

L.   Claim 15

Claim 15 is directed to the system (10 of FIG. 1) of claim 12, wherein the argument model is represented as an Extensible Mark-up Language (XML) schema (Par. [0039]).

M.   Claim 16

Claim 16 is directed to a computer readable medium (827 of FIG. 16) having stored executable instructions for determining the sensitivity of a hypothesis of interest to a parameter within an argument model (750 of FIG 15; Par. [0077]), such that an associated processor executing the executable instructions performs a plurality of functions (Par. [0029] and Par. [0083]). The plurality of functions comprise providing a continuous mechanism for a user to modify the parameter (752 of FIG. 15), such that the user can make multiple modifications to the parameter in rapid sequence (Par. [0078]). The plurality of functions further comprise updating a confidence value associated with the hypothesis of interest in response to the modification of the parameter (758 of FIG. 15; Par. [0079]). The plurality of functions still further comprise altering a display of the confidence value of the hypothesis of interest in real time to match the updated confidence value in response to each modification of the parameter (760 of FIG. 15; Par. [0080]). The display of the confidence value comprises a qualitative display of the confidence value, such that a non-numerical quality of a node associated with the hypothesis of interest is altered to illustrate a change in the confidence value (Par. [0080]).

N.   Claim 18

Claim 18 is directed to the computer readable medium (827 of FIG. 16) of claim 16, wherein the non-numerical quality being the relative saturation of a color associated with the node (Par. [0080]).

O.   Claim 19

Claim 19 is directed to the computer readable medium (827 of FIG. 16) of claim 16, wherein the display of the confidence value further comprises a quantitative display (Par. [0080]).

P.   Claim 20

Claim 20 is directed to the computer readable medium (827 of FIG. 16) of claim 16, wherein the parameter comprises a confidence value associated with a contributing hypothesis within the structured argument (Par. [0080]).

Q.   Claim 21

Claim 21 is directed to the computer readable medium (827 of FIG. 16) of claim 20, wherein the continuous mechanism comprises a line graph, spanning a minimum confidence value and a maximum confidence value, and a slider for selecting a value on the line graph (Par. [0078]).

R.   Claim 22

Claim 22 is directed to the computer readable medium (827 of FIG. 16) of claim 16, wherein the argument model comprises at least two contributing hypotheses (Par. [0079]). The parameter comprises an influence value associated with a logical relationship between the two contributing hypotheses (Par. [0079]).

S.   Claim 23

Claim 22 is directed to the computer readable medium (827 of FIG. 16) of claim 22, wherein the continuous mechanism comprising a line graph, spanning a minimum influence value and a maximum influence value, and a slider for selecting a value on the line graph (Par. [0078] and Par. [0079]).

T.   Claim 25

Claim 25 is directed to the computer readable medium (827 of FIG. 16) of claim 16, wherein the plurality of functions further comprises providing a predetermined series of values into the argument such that the at least one parameter is altered according to the predetermined series of values (Par. [0067] and Par. [0068]). The predetermined series of values represents changes in the at least one parameter over a period of time (Par. [0067]).

U.   Claim 26

Claim 26 is directed to a system (10 of FIG. 1, 50 of FIG. 2, 100 of FIG. 3) for editing and displaying a structured argument (Par. [0027], Par. [0041]), comprising a plurality of parameters (Par. [0029]). The system (10 of FIG. 1) comprises a means for storing (827, 829, and 831 of FIG. 16) the structured argument (Par. [0084]). The system (10 of FIG. 1) further comprises a means for processing (821 of FIG. 16) executable instructions (Par. [0083]) and accessing (836 of FIG. 16; 832 of FIG. 16; 828 and 823 of FIG. 16; 830 and 833 of FIG. 16) the means for storing (827, 829, and 831 of FIG. 16; Par. [0084]). The system (10 of FIG. 1) still further comprises a means for graphically displaying (12 of FIG. 1, 58 of FIG.2, 102 of FIG. 3, 200 of FIG. 4, 250 of FIG. 5, 847 of FIG. 16) the plurality of parameters, each having an associated value, wherein the means for displaying (12 of FIG. 1, 58 of FIG.2, 102 of FIG. 3, 200 of FIG. 4, 250 of FIG. 5, 847 of FIG. 16) comprises a means for scaling (16 of FIG. 1; 104 of FIG. 3) a displayed argument model to a desired size (Par. [0031], Par. [0034], Par. [0040], Par. [0041], Par. [0043], Par. [0047], Par. [0053]). The system (10 of FIG. 1, 50 of FIG. 2, 100 of FIG. 3) still yet further comprises a means for receiving (12 of FIG. 1, 58 of FIG. 2, 102 of FIG. 3) input from a user (Par. [0034], Par. [0040], Par. [0041]), wherein the input comprises a request to modify (16 of FIG. 1, 106 of FIG. 3) respective values of at least one selected parameter from the plurality of parameters (Par. [0035], Par. [0041]). The system (10 of FIG. 1, 50 of FIG. 2, 100 of FIG. 3) still further comprises a means for modifying (16 of FIG. 1, 106 of FIG. 3) the values of the at least one selected parameter and at least one other parameter from the plurality of parameters (Par. [0035], Par. [0041]). The system (10 of FIG. 1, 50 of FIG. 2, 100 of FIG. 3) still further comprises a means for altering (602 of FIG. 12) at least one parameter of the structured argument according to a predetermined series of values as to represent changes in the at least one parameter over a period of

time (Par. [0067]). The system (10 of FIG. 1) finally comprises a means for updating (20 of FIG. 1) the modified parameter values and the means for displaying (12 of FIG. 1) in real time in response to the user input (Par. [0037]).

V.   Claim 27

Claim 27 is directed to the system (10 of FIG. 1, 50 of FIG. 2, 100 of FIG. 3) of claim 26, wherein the means for displaying (12 of FIG. 1, 58 of FIG.2, 102 of FIG. 3, 200 of FIG. 4, 250 of FIG. 5, 847 of FIG. 16) comprises a means for qualitatively displaying (10 of FIG. 1, 50 of FIG. 2, 100 of FIG. 3) the value of the plurality of parameters and means for quantitatively displaying (10 of FIG. 1, 50 of FIG. 2, 100 of FIG. 3) the value of the plurality of parameters (Par. [0031], Par. [0034], Par. [0040], Par. [0041], Par. [0043], Par. [0047], Par. [0053]).

W.   Claim 30

A set of stored executable instructions (14 of FIG. 1) that can be executed by an associated processor to edit and display a structured argument having a plurality of associated parameters (Par. [0033]). The executable instructions (14 of FIG. 1) comprises a user interface (12 of FIG. 1) that graphically displays the plurality of parameters, comprising respective confidence values for a plurality of hypotheses, at a user accessible display and receives input from a user defining the value of a selected parameter (Par. [0034]). The plurality of hypotheses are displayed as colored nodes within a belief network (Par. [0033]). The respective confidence values being represented as at least one of the brightness, hue, and saturation of the color of the node (Par. [0032]). The executable instructions (14 of FIG. 1) further comprise a computational engine (19 of FIG. 1) that alters the selected parameter to the defined value, updates the plurality of parameters according to the defined value of the selected parameter, and provides the altered parameters to the user interface, such that the display is updated in real time to reflect the user input (Par. [0037]).

X.   Claim 31

A system (14 of FIG. 1) for editing and displaying a structured argument (Par. [0027]), having a plurality of associated parameters (Par. [0029]). The system (14 of FIG. 1) comprises a processor (821 of FIG. 16), operative to execute computer executable instructions (Par. [0083]). The system (14 of FIG. 1) further comprises a computer readable medium (827 of FIG. 16) that stores the computer executable instructions (Par. [0084]). The computer executable instructions comprise a user interface (12 of FIG. 1) that graphically displays the plurality of parameters (Par. [0031]), comprising a plurality of influence parameters representing the degree of logical relatedness between respective associated first and second hypotheses, at a user accessible display and receives input from a user defining the value of a selected parameter (Par. [0034]). The influence parameters are displayed as connectors between respective first nodes, representing the associated first hypotheses, and respective second nodes, representing the associated second hypotheses, and the magnitude of a given influence parameter is represented by at least one spatial dimension of the associated connector of the influence parameter (Par. [0030]). The plurality of parameters comprises respective confidence values for a plurality of hypotheses (Par. [0031]). The computer executable instructions further comprise a computational engine (18 of FIG. 1) that alters the selected parameter to the defined value (Par. [0035]), updates the plurality of parameters according to the defined value of the selected parameter (Par. [0035]), and provides the altered parameters to the user interface, such that the display is updated in real time to reflect the user input (Par. [0037]).

Y.   Claim 33

Claim 33 is directed to the system (14 of FIG. 1) of claim 31, wherein at least one confidence value being displayed to a user via a first, qualitative indicator and a second, quantitative indicator (Par. [0031]).

Z.   Claim 34

Claim 34 is directed to the system (14 of FIG. 1) of claim 31, wherein the plurality of hypotheses being displayed as colored nodes within a belief network, and the respective confidence values being represented as at least one of the brightness, hue, and saturation of the color of the node (Par. [0031]).

VII.   GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

A.   Whether claims 1-9, 12-15, 26-27 and 31-34 are Preemptive under 35 U.SC. §101.

B.   Whether claim 30 is Preemptive under 35 U.S.C. §101.

C.   Whether claims 1-9, 12-15, 26-27 and 30-34 Lack Utility under 35 U.SC. §101.

D.   Whether Claims 16, 18-23 and 25 are Directed to Non-statutory Subject Matter under 35 U.S.C. §101.

E.   Whether Claims 16, 18-23 and 25 are Preemptive under 35 U.SC. §101.

F.   Whether Claims 1, 3-9, 12-16, 18-23, 25-27, 30, 31, 33 and 34 are indefinite for lacking utility under 35 U.S.C. §101.

VIII.   ARGUMENT

In the Final Rejection, claim 26 was rejected as being anticipated under 35 U.S.C. §102(b). Also in the Final Rejection, claims 1, 13, 14, 16 and 30-34 were rejected as being made obvious under 35 U.S.C. §103(a). In the Advisory Action, it appeared that the rejections of claims 1, 13, 14, 16, 26 and 30-34 as being anticipated or made obvious by the prior art were withdrawn, since the Advisory Actions stated that the Final Response did not place the application in

condition for allowance because: "Appellant has not overcome the 101 rejection i.e., resolution of the aforementioned will need to be ascertained before notice of allowance can be issued" (See Advisory Action, Page 2). A telephone conference between the Examiner and Appellant's representative on June 30, 2008 confirmed the withdrawal of the rejections of the claims based on prior art, such that only the rejections under 35 U.S.C. §101 (and corresponding rejections under 35 U.S.C. §112) remained.

A. 35 U.S.C. §101 Rejection of Claims 1-9, 12-15, 26-27 and 31-34 as Being Preemptive

1. Claims 1 and 31

Claims 1 and 31 are not preemptive. Claims 1 and 31 recite a processor that executes computer executable instructions, and that stored computer executable instructions are stored on a computer readable medium. Appellant's representative respectfully submits that the holding by the U.S. Court of Appeals for the Federal Circuit ("Federal Circuit") in *In re Warmerdam*, supports the patentability of claims 1 and 31. 33 F.3d 1354, 31 U.S.P.Q.2d 1754 (Fed. Cir. 1994). Specifically, in *Warmerdam*, the Federal Circuit held claims 1-4 of the appellant's application (which were method claims) to be nonstatutory. 33 F.3d 1354, 1360, 31 U.S.P.Q.2d 1754. However, in *Warmerdam*, claim 5 of the appellant's application recited a machine having a memory which contains data representing a bubble hierarchy generated by a method of any of the claims 1-4 of the appellant's application. 33 F.3d 1354, 1358, 31 U.S.P.Q.2d 1754. The Federal Circuit held that claim 5 of the appellant's application was for a machine, and was clearly patentable subject matter. 33 F.3d 1354, 1360, 31 U.S.P.Q.2d 1754. Appellant's representative respectfully submits that claims 1 and 31 of the present application are analogous to claim 5 of the application considered in *Warmerdam*. That is, claims 1 and 31 are <u>system claims</u>, which should be

categorized as machines having executable algorithms for transforming parameters associated with a structured argument.

Moreover, in rejecting the claims (particularly independent claims 1 and 31), the Examiner contends that the claims clearly preempt the application of editing and displaying arguments in any conceivable language or representation of language for any conceivable subject displayed or edited in any conceivable way by a computer system (See Final Rejection, Page 4). However, the Examiner cited no legal authority to support this finding. In fact, the Examiner has had ample opportunity to cite legal authority for the finding. In both the Final Rejection and the preceding Non-Final Office Action dated August 30, 2007, the Examiner failed to cite legal authority supporting the position that claims 1 and 31 are preemptive. Appellant's representative submits that the Examiner failed to cite relevant legal authority because claims 1 and 31 are not preemptive under the current case law.

In considering the issue of preemption, the Federal Circuit cited a legal test known as the Freeman-Walter-Abele test. *Arrhythmia Research Tech., Inc. v. Corazonix Corp.* 958, F.2d 1053, 1058, 22 U.S.P.Q.2d 1033 (Fed. Cir. 1992). In *Arrhythmia*, the Federal circuit held that the test for patentability (under 35 U.S.C. §101) requires no more than an algorithm be applied in any manner to physical elements or process steps, provided that its application is circumscribed by more than a field of use limitation or non-essential post-solution activity. *Id.* Appellant's representative respectfully submits that claims 1 and 31 (substantially) recite a user interface that graphically displays a plurality of parameters to a user accessible display and receives input from a user defining a value of a selected parameter, wherein the plurality of parameters comprises a respective confidence value for a plurality of hypotheses. Appellant's representative respectfully submits that the recited confidence value can be used by a user to make decisions related to the recited hypotheses (e.g., application in

military and defense, industrial processes, design work, research, and corporate management, etc.).

Moreover, Appellant's representative respectfully submits that displaying a plurality of parameters to a user (as recited in claims 1 and 31) would not constitute either a field of use limitation or non-essential post-solution activity. Rather, in claims 1 and 31, the providing of plurality of parameters to a user in the manner claimed in claims 1 and 31 is the solution. Claims 1 and 31 are directed to systems for editing and displaying a structured argument having a plurality of parameters. Thus, clearly the user interface that graphically displays such a plurality of parameters is in fact essential to the system of claims 1 and 31. Therefore, claims 1 and 31 are related to algorithms applied in to physical elements, namely, a user interface that displays a plurality of parameters. Thus, Appellant's representative respectfully submits that claims 1 and 31, are directed to statutory subject matter. Accordingly, withdrawal of this rejection of claims 1 and 31 is respectfully requested.

2.   Claims 2-9, 12-15 and 32-34

Claims 2-9, 12-15 and 32-34 depend from claims 1 and 31, and are not preemptive for at least the same reasons as claims 1 and 31, and for the specific elements recited therein. Accordingly, withdrawal of the rejection of claims 2-9, 12-15 and 32-34 is respectfully requested.

3.   Claim 26

Claim 26 is not preemptive. Claim 26 is a system claim that would constitute patentable subject matter under the Federal Circuit's holding in *Warmerdam*. 33 F.3d 1354, 1358, 31 U.S.P.Q.2d 1754. Additionally, claim 26 recites means for storing a structured argument, means for processing executable instructions and accessing the means for storing and means for

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graphically displaying a plurality of parameters, each having an associated value, the means for displaying comprising means for scaling a displayed argument model to a desired size. The Federal circuit held that the test for patentability (under 35 U.S.C. §101) requires no more than an algorithm be applied in any manner to physical elements or process steps, provided that its application is circumscribed by more than a field of use limitation or non-essential post-solution activity. *Arrhythmia Research Tech., Inc.* 958, F.2d 1053, 1058, 22 U.S.P.Q.2d 1033. Means for graphically displaying a plurality of parameters, each having an associated value, is clearly related to an algorithm (e.g., executable instructions) that is applied to physical elements (e.g., a computer display). Thus, Appellant's representative respectfully submits that claim 26 is not preemptive. Accordingly, withdrawal of the rejection of claim 26 is respectfully requested.

4. Claim 27

Claim 27 depends from claim 26, and is not preemptive for at least the same reasons as claim 26, and for the specific elements recited therein. Accordingly, withdrawal of this rejection is respectfully requested.

B. 35 U.S.C. §101 Rejection of Claim 30 as Being Preemptive

Claim 30 is not preemptive. Claim 30 recites a set of stored executable instructions that can be executed by an associated processor. In *In re Nuijten*, the Federal Circuit held that a signal standing alone (e.g. traveling through a vacuum) was not covered under the statutory class of an "article of manufacture," and thus did not constitute patentable subject matter. 500 F.3d 1346, 1356-1357, 84 U.S.P.Q.2d 1495 (Fed. Cir. 2007). However, the Federal Circuit also noted that such a signal could be stored for later use, but the result of such a storage would be a "storage medium" containing the signal, which would likely be covered by an allowed claim in the Application considered in *Nuijten*. *Id.* At

1357. As noted above, claim 30 is directed a set of <u>stored</u> executable instructions, which should be considered patentable subject matter under 35 U.S.C. §101 in view of the Federal Circuit's holding in *Nuijten*.

Additionally, the Federal circuit held that the test for patentability (under 35 U.S.C. §101) requires no more than an algorithm be applied in any manner to physical elements or process steps, provided that its application is circumscribed by more than a field of use limitation or non-essential post-solution activity. *Arrhythmia Research Tech., Inc. v. Corazonix Corp.* 958, F.2d 1053, 1058, 22 U.S.P.Q.2d 1033 (Fed. Cir. 1992). Appellant's representative respectfully submits that claim 30 recites a user interface that graphically displays a plurality of parameters comprising confidence values for a plurality of hypotheses at a user accessible display and receives input from a user defining a value of a selected parameter, wherein the plurality of hypotheses are displayed as colored nodes within a belief network, and the respective confidence values are represented as at least one of a brightness, hue and saturation of the color of the node. Thus, in claim 30, numerical quantities (confidence values) are represented by a visual indicator (brightness hue and saturation) of a node. Thus, clearly, in claim 30, the confidence values are displayed in a way that is not preemptive.

Appellant's representative respectfully submits that the recited confidence values can be used by a user to make decisions related to the recited hypotheses (e.g., application in military and defense, industrial processes, design work, research, and corporate management, etc.). Therefore, claim 30 is directed to arguments applied in to physical elements, namely, a user interface that displays a plurality of parameters in a specific way (e.g., at least one of brightness, hue and saturation of the color of the node). Thus, Appellant's representative respectfully submits that claim 30 is directed to statutory subject matter. Accordingly, withdrawal of this rejection is respectfully requested.

C. **35 U.S.C. §101 Rejection of Claims 1-9, 12-15, 26-27 and 30-34**
for Lacking Utility

In the Final Rejection, the Examiner rejects claims 1, 3-9, 12-15, 26-27, 31
and 33-34 for lacking utility, the Examiner argues that the Specification of the
Application fails to disclose what specific and substantial areas of government
policy the invention is useful, as well as how it is useful (See Final Rejection,
Pages 5-6). In rejecting claim 30, the Examiner relies solely on the reasons for
the rejection of claims 1, 26, and 31. Thus, for purposes of brevity, these
rejections shall be responded to concurrently.

Appellant's representative submits that the Specification does disclose
specific and substantial areas of government policy in which the subject matter of
claims 1, 3-9, 12-15, 26-27, 30, 31 and 33-34 is useful. FIG. 4 of the Application
clearly shows a very specific example of the present invention being
implemented. Drawings alone may provide a 'written description' of an invention.
Cooper Cameron Corp. v. Kvaerner Oilfield Prods., 291 F.3d 1317, 1322, 62
U.S.P.Q.2d 1846 (Fed. Cir. 2002). Drawings constitute an adequate description
if they describe what is claimed and convey to those of skill in the art that the
patentee actually invented what is claimed. *Id.* FIG. 4 illustrates the present
invention being used to analyze a hypothesis of whether or not North Korea is
receiving long range missile assistance from Russia. Appellant's representative
respectfully submits that one of ordinary skill would immediately appreciate the
importance of a confidence value related to such a hypothesis. For example,
such a confidence value could, for instance, be empoyed by a governmental
official (e.g., the Secretary of Defense) to decide what course of action should be
taken (e.g., change diplomatic strategies). Therefore, the present Application
clearly discloses a specific utility for the claimed invention. Appellant's
representative respectfully notes that there is no requirement in 35 U.S.C. §101
that a single specific utility be claimed. Thus, claims 1, 3-9, 12-15, 26-27, 30, 31

and 33-34 do not lack utility. Accordingly, withdrawal of this rejection is respectfully requested.

D.   35 U.SC §101 Rejection of Claims 16, 18-23 and 25 for Being Directed to Non-statutory Subject Matter

1.   Claim 16

The Examiner contends that the subject matter of claims 16, 18-23 and 25 is directed to Non-statutory Subject matter. To support this argument, the Examiner states the result of stored executable instructions recited in claim 16 is a mathematical abstraction (See Final Rejection, Page 7). Appellant's representative respectfully disagrees. Claim 16 recites altering a display of a confidence value of a hypothesis of interest in real time to match an updated confidence value in response to each modification of a parameter. A confidence value (which is altered in claim 16) is not a mathematical abstraction. Instead, the confidence value represents real world results for a given hypothesis, such as the hypothesis disclosed in FIG. 4 of the present Application. Additionally, displaying a result (e.g., on a computer display) is also not a mathematical abstraction. Therefore, claims 16, 18-23 and 25 are not merely directed to a mathematical abstraction, as contended by the Examiner. Accordingly, withdrawal of this rejection is respectfully requested.

2.   Claims 18-23 and 25

Claims 18-23 and 25 depend from claim 16 and are not directed to a mathematical abstraction for at least the same reasons as claim 16, and for the specific elements recited therein. Accordingly, withdrawal of this rejection is respectfully requested.

E.   **35 U.SC §101 Rejection of Claims 16, 18-23 and 25 for Being Preemptive**

1.   **Claim 16**

Claim 16 is not preemptive. The Federal circuit held that the test for patentability (under 35 U.S.C. §101) requires no more than an algorithm be applied in any manner to physical elements or process steps, provided that its application is circumscribed by more than a field of use limitation or non-essential post-solution activity. *Arrhythmia Research Tech., Inc.*, F.2d 1053, 1058, 22 U.S.P.Q.2d 1033. Claim 16 recites altering a display of confidence values of a hypothesis of interest in real time to match an updated confidence value in response to each modification of a parameter. In claim 16, the display of the confidence value comprises a qualitative display of the confidence value, such that a non-numerical quality of a node associated with the hypothesis of interest is altered to illustrate a change in the confidence value.

Claim 16 is directed to a computer readable medium having stored executable instructions that include altering a display. Appellant's representative respectfully submits that alteration of the display in the manner claimed in claim 16 recites specific features of the output of the claimed display. In particular, in claim 16 a non-numerical quality of a node associated with a hypothesis is altered to illustrate a change in a confidence value. That is, in claim 16 a non-numerical quality (e.g., color, brightness, hue, size, etc.) of a node is altered to represent a change in a numerical value (a confidence value). Appellant's representative submits that such a feature clearly establishes that claim 16 is not preemptive, since claim 16 recites a specific function that alters a display in a specific way. Accordingly, withdrawal of this rejection is respectfully requested.

2. Claims 18-23 and 25

Claims 18-23 and 25 depend from claim 16 and are not preemptive for at least the same reasons as claim 16, and for the specific elements recited therein. Accordingly, withdrawal of this rejection is respectfully requested.

F. 35 U.SC §112, First Paragraph Rejection of Claims 1, 3-9, 12-16, 18-23, 25-27, 30, 31, 33 and 34

Claims 1, 3-9, 12-16, 18-23, 25-27, 30, 31, 33 and 34 have been rejected under 35 U.S.C. §112, First Paragraph for lacking a specific and substantial utility. Appellant's representative respectfully submits that it appears that the reasoning for the rejection of claims 1, 3-9, 12-16, 18-23, 25-27, 30, 31, 33 and 34 is based solely on the rejection of claims 1, 3-9, 12-16, 18-23, 25-27, 30, 31, 33 and 34 under 35 U.S.C. §101. Since Appellant's representative has established that claims 1, 3-9, 12-16, 18-23, 25-27, 30, 31, 33 and 34 are not rejectable under 35 U.S.C. §101, Appellant's representative respectfully submits that claims 1, 3-9, 12-16, 18-23, 25-27, 30, 31, 33 and 34 are not rejectable under 35 U.S.C. §112, First Paragraph. Accordingly, withdrawal of this rejection is respectfully requested.

IX.   **APPENDICES**

The first attached Appendix contains a copy of the claims on appeal.

The second and third Appendices have been included to comply with statutory requirements.

Please charge any deficiency or credit any overpayment in the fees for this Appeal Brief to Deposit Account No. 20-0090.

Respectfully submitted,

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Claims Appendix

1. (Finally Rejected)   A system for editing and displaying a structured argument, having a plurality of associated parameters, the system comprising:

a processor operative to execute computer executable instructions; and

a computer readable medium that stores the computer executable instructions, the computer executable instructions comprising:

a user interface that graphically displays the plurality of parameters at a user accessible display and receives input from a user defining the value of a selected parameter, wherein the plurality of parameters comprises respective confidence values for a plurality of hypotheses;

a computational engine that alters the selected parameter to the defined value, updates the plurality of parameters according to the defined value of the selected parameter, and provides the altered parameters to the user interface, such that the display is updated in real time to reflect the user input; and

a simulation function that alters at least one parameter of the structured argument according to a predetermined series of values, representing changes in the at least one parameter over a period of time.

2.   (Canceled)

3.   (Finally Rejected): The system of claim 1, at least one confidence value being displayed to a user via a first, qualitative indicator and a second, quantitative indicator.

4.   (Finally Rejected): The system of claim 1, the plurality of hypotheses being displayed as colored nodes within a belief network, and the respective confidence values being represented as at least one of the brightness, hue, and saturation of the color of the node.

5.   (Finally Rejected): The system of claim 4, the plurality of hypotheses comprising supporting, detracting, and neutral hypotheses, supporting hypotheses being associated with a first color, detracting hypotheses being associated with a second color, and neutral hypotheses being associated with a third color.

6.   (Finally Rejected): The system of claim 1, the plurality of parameters comprising a plurality of influence parameters, the influence parameters representing the degree of logical relatedness between respective associated first and second hypotheses.

7.   (Finally Rejected): The system of claim 6, at least one influence parameter being displayed to a user via a first, qualitative indicator and a second, quantitative indicator.

8.   (Finally Rejected): The system of claim 6, the influence parameters being displayed as s connectors between respective first nodes, representing the associated first hypothesis, and respective second nodes, representing the associated second hypothesis, the magnitude of the influence parameter being represented by at least one spatial dimension of the connector.

9.   (Finally Rejected): The system of claim 1, the computer executable instructions further comprising a collapse node function that allows the structured argument to be scaled to a desired size.

10-11. (Cancelled).

12.   (Finally Rejected): The system of claim 1, the plurality of parameters defining an argument model.

13.   (Finally Rejected): The system of claim 12, the argument model being represented by a Bayesian belief network.

14. (Finally Rejected): The system of claim 12, the argument model being represented by a Dempster-Shafer belief network.

15. (Finally Rejected): The system of claim 12, the argument model being represented as an Extensible Mark-up Language (XML) schema.

16. (Finally Rejected): A computer readable medium having stored executable instructions for determining the sensitivity of a hypothesis of interest to a parameter within an argument model, such that an associated processor executing the executable instructions performs a plurality of functions comprising:

providing a continuous mechanism for a user to modify the parameter, such that the user can make multiple modifications to the parameter in rapid sequence;

updating a confidence value associated with the hypothesis of interest in response to the modification of the parameter; and

altering a display of the confidence value of the hypothesis of interest in real time to match the updated confidence value in response to each modification of the parameter, wherein the display of the confidence value comprises a qualitative display of the confidence value, such that a non-

numerical quality of a node associated with the hypothesis of interest is altered to illustrate a change in the confidence value.

17.   (Cancelled).

18.   (Finally Rejected): The computer readable medium of claim 16, the non-numerical quality being the relative saturation of a color associated with the node.

19.   (Finally Rejected): The computer readable medium of claim 16, the display of the confidence value further comprising a quantitative display.

20.   (Finally Rejected): The computer readable medium of claim 16, the parameter comprising a confidence value associated with a contributing hypothesis within the structured argument.

21.   (Finally Rejected): The computer readable medium of claim 20, the continuous mechanism comprising a line graph, spanning a minimum confidence value and a maximum confidence value, and a slider for selecting a value on the line graph.

22.   (Finally Rejected): The computer readable medium of claim 16, the argument model comprising at least two contributing hypotheses, the parameter comprising an influence value associated with a logical relationship between the two contributing hypotheses.

23.   (Finally Rejected): The computer readable medium of claim 22, the continuous mechanism comprising a line graph, spanning a minimum influence value and a maximum influence value, and a slider for selecting a value on the line graph.

24.   (Cancelled).

25.   (Finally Rejected): The computer readable medium of claim 16, the plurality of functions further comprising providing a predetermined series of values into the argument such that the at least one parameter is altered according to the predetermined series of values, the predetermined series of values representing changes in the at least one parameter over a period of time.

26.   (Finally Rejected): A system for editing and displaying a structured argument, comprising a plurality of parameters, comprising:

means for storing the structured argument;

means for processing executable instructions and accessing the means for storing;

means for graphically displaying the plurality of parameters, each having an associated value, the means for displaying comprising means for scaling a displayed argument model to a desired size;

means for receiving input from a user, the input comprising a request to modify respective values of at least one selected parameter from the plurality of parameters;

means for modifying the values of the at least one selected parameter and at least one other parameter from the plurality of parameters;

means for altering at least one parameter of the structured argument according to a predetermined series of values as to represent changes in the at least one parameter over a period of time; and

means for updating the modified parameter values and the means for displaying in real time in response to the user input.

27.   (Finally Rejected): The system of claim 26, the means for displaying comprising means for qualitatively displaying the value of the plurality

of parameters and means for quantitatively displaying the value of the plurality of parameters.

28-29. (Cancelled).

30.   (Finally Rejected): A set of stored executable instructions that can be executed by an associated processor to edit and display a structured argument having a plurality of associated parameters, the executable instructions comprising:

a user interface that graphically displays the plurality of parameters, comprising respective confidence values for a plurality of hypotheses, at a user accessible display and receives input from a user defining the value of a selected parameter, wherein the plurality of hypotheses are displayed as colored nodes within a belief network, and the respective confidence values being represented as at least one of the brightness, hue, and saturation of the color of the node; and

a computational engine that alters the selected parameter to the defined value, updates the plurality of parameters according to the defined value of the selected parameter, and provides the altered parameters to the user interface, such that the display is updated in real time to reflect the user input.

31.   (Finally Rejected): A system for editing and displaying a structured argument, having a plurality of associated parameters, the system comprising:

a processor, operative to execute computer executable instructions; and

a computer readable medium that stores the computer executable instructions, the computer executable instructions comprising:

a user interface that graphically displays the plurality of parameters, comprising a plurality of influence parameters representing the degree of logical relatedness between respective associated first and second hypotheses, at a user accessible display and receives input from a user defining the value of a selected parameter, wherein the influence parameters are displayed as connectors between respective first nodes, representing the associated first hypotheses, and respective second nodes, representing the associated second hypotheses, and the magnitude of a given influence parameter is represented by at least one spatial dimension of the associated connector of the influence parameter, wherein the plurality or parameters comprises respective confidence values for a plurality of hypotheses; and

a computational engine that alters the selected parameter to the defined value, updates the plurality of parameters according to the defined value of the selected parameter, and provides the altered parameters to the user interface, such that the display is updated in real time to reflect the user input.

32.   (Canceled)

33.   (Finally Rejected): The system of claim 31, at least one confidence value being displayed to a user via a first, qualitative indicator and a second, quantitative indicator.

34.   (Finally Rejected): The system of claim 31, the plurality of hypotheses being displayed as colored nodes within a belief network, and the respective confidence values being represented as at least one of the brightness, hue, and saturation of the color of the node.

<u>Evidence Appendix</u>

None

<u>Related Proceedings Appendix</u>

None